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ABSTRACT

A study was undertaken to determine the application of micrographics in records management in business and government for information storage and retrieval. (Among six secondary purposes of the study were determining kinds of systems available, comparing vendors' claims with users' experience with the systems, ascertaining users' opinions of the systems' effectiveness in records management, and delineating the implications for business education.) Two interview guides were used to collect data from nine top management executives in selected companies that market micrographics systems and from nine executives responsible for records management in selected companies and governmental agencies. Two checklists were used to determine the consistency of data collected during the interviews. Each of the vendors and users was visited by the investigator and interviewed. Checklists were mailed to each person interviewed. The data collected were written as case reports and not statistically analyzed. Generally, users found micrographics valuable in terms of space reduction, file integrity, and better personnel utilization. Eleven major findings are reported altogether, along with three implications and five recommendations for micrographics in business education. (The first half of the paper is a discussion of office management concepts and a description of micrographics.) (JH)

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THE APPLICATION OF MICROGRAPHICS IN RECORDS MANAGEMENT

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

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Introduction

During the past two decades, men and machines have managed to create more paper documents than were created during the 5,000 years of recorded history preceding them (Moskowitz, 1972). The daily addition of 1.5 million documents, produced primarily by computer, inundates a records management program in terms of distilling vital information for management purposes. As quoted by Ridenour (1952):

> They are called computers simply because computation is the only significant job that has so far been given to them. The name has somewhat obscured the fact that they are capable of much greater generality. . . To describe its potentialities, the computer needs a new name. Perhaps as good a name as any is "information machine."

In order to plan and control business operations, top-level management must have the right information at the right place and at the right time to insure the right decision. Increasingly, management is becoming dependent on computerized data bases from which can be extracted information that is useful for the fast development of alternative courses of action to achieve an objective. Whereas the computer has increased productivity and efficiency in *data* processing operations including accounting, the rate of productivity in *word* processing operations in the office remains about the same.

Office management has traditionally been associated with the handling of paperwork--the innumerable details which have had to be taken care of to allow the two primary operational arms of business, production and

marketing--to get on with their work of generating profits, states Heyel (1972). These functions, as well as personnel, procurement, and the controlling functions of management--finance, accounting, and legal--have also relied upon office management for certain paperwork and service requirements in the areas of supplies, routine equipment and facilities, and secretarial and mail services.

In a supportive sense, these services have been recognized as important to smooth operation, but the *total* office management function has too often been viewed as of secondary importance to the two profit-generating functions. However, with today's growing sophistication and complexity of management decisions, the total of these supportive services is being looked upon as more than mere paperwork formerly thought of in connection with the term "office management."

To the two profit centers of production and marketing, a third is now added--administrative management. Because of the increasingly important role the supportive services play in enabling the first two to achieve their objective and at the lowest possible cost, administrative management is likewise being scrutinized for savings and efficiencies (Terry, 1970). Some of the most advanced technology in systems and procedures is being applied to transform the office into an automated and integrated administrative support center* toward the end of achieving cost savings and operating efficiencies in the performance of five basic operations: telephone and mail handling, dictation and transcription, text editing, records management, and reprographics.

*Found in the literature as word processing center, administrative support/word processing, information processing, and management processing.

The Administrative Support Center

The term "administrative support" is synonymous with office management and administrative management to a degree. Place and Hicks define "office management" as the information handling and memory functions of the office (1958). Terry (1970) defines "administrative management" as the planning, controlling, and organizing of information work, and actuating those performing it so as to achieve predetermined objectives. According to Littlefield, Rachel, and Caruth, "administrative management" is that function within the organization with responsibility for the two overall operations of the firm. Administrative management comprises those functions that support line management--production, marketing, accounting, and finance (Littlefield et al., 1970).

The term "word processing" was coined by IBM in 1964. With the development of the Magnetic Tape Selectric Typewriter at IBM-Germany, the company recognized that words could be captured and stored in much the same way the computer stores numbers. As described in Think (1971), IBM envisioned using dictation equipment to "feed" the words into a word processing center as well attuned to the equipment's versatility as programmers are to computers. However, the company acknowledged that all of the basic office operations would co-mingle at some point in the processing of information in this kind of setting. Against this backdrop, the term "administrative support" emerged, according to Fetridge and Minor (1975), as the systematizing of logistics, production methods, and environmental control, through the integration of equipment and personnel, to maximize productivity, responsiveness, convenience, job satisfaction, and work quality.

In the automated and integrated office, basic operations interface to become a combination of systems. Fetridge and Minor (1975) describe these as communications, dictation, composing/typesetting, information storage and retrieval, and reprographics. Ober (1972) refers to the major office functions as telephone and mail handling, dictation and transcription, automatic typewriting, records management, and reprographics. Cumpston in Word Processing World (1975) refers to the components as telephone/mail handling, dictation/transcription, text editing, records management, and reprographics.

The administrative support center is not just another name for a stenographic-secretarial pool. Indeed, according to U. S. Department of Labor figures released in September, 1977, the position of stenographer will decline sharply by 1980. However, as pointed out by Simpson (1973), the new concept of the office and the application of new technologies virtually forces the setting up of a hierarchy of office positions in which initial hiring and opportunities for advancement are based on carefully prescribed competencies spelled out in job descriptions. Among other things, this more efficient concept permits women in stereotyped positions to enter the administrative management level.

Formerly, women were named supervisors but there was no place to go from there. Today, women in supervisory positions, and other women knowledgeable in the management of administrative support centers and the tasks performed by office workers, are entering high-level line and staff positions with a chance for advancement based on demonstrated performance.

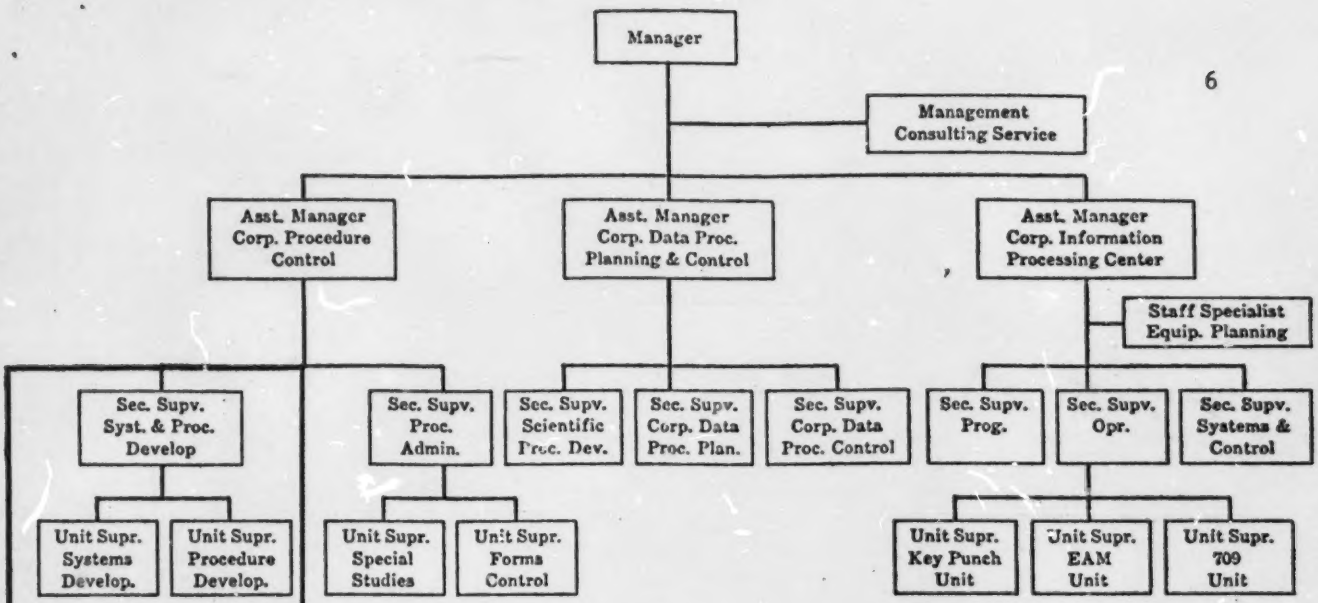
Business organization and management requires the kind of structure that effectively interrelates the functions of management and the various

on-line and off-line services that are supportive to efficient operation. Example 1 on the next page shows a corporate organizational chart in which the systems and services can be seen with their line relationships. The chart shown as Example 3 displays the office systems and procedures which are being scrutinized currently by management in terms of cost effectiveness and cost savings.

The concept of the Administrative Support Center synthesizes the five basic office functions--telephone/mail handling, dictation and transcription, text editing, records management, and reprographics--into an automated and integrated information processing system designed to best utilize the capabilities of personnel, procedures, and equipment with time and cost savings for the purpose of facilitating the planning, decision-making, and problem-solving functions of management.

It must be recognized, however, that the technologies which increase the flow of information likewise create problems in its management. The recognition of the costs of processing and, particularly, the storing of the great volume of records has made the problem more evident to management. Accepting that fact, this study was undertaken to determine the kinds of information storage and retrieval systems available and in use for records management.

Micrographics is a relatively new industry which reduces any form of information to a microform medium. Since World War II, it has been possible to commit information to microfilm, yet it is but one microform in use currently. Most of the micrographics systems conform to continuous roll film or cartridge, microfiche (negative and positive), aperture, jacket, and ultrafiche produced by the computer or laser for storing information. Retrieval is by means of a reader or reader-printer, microfilm projector,

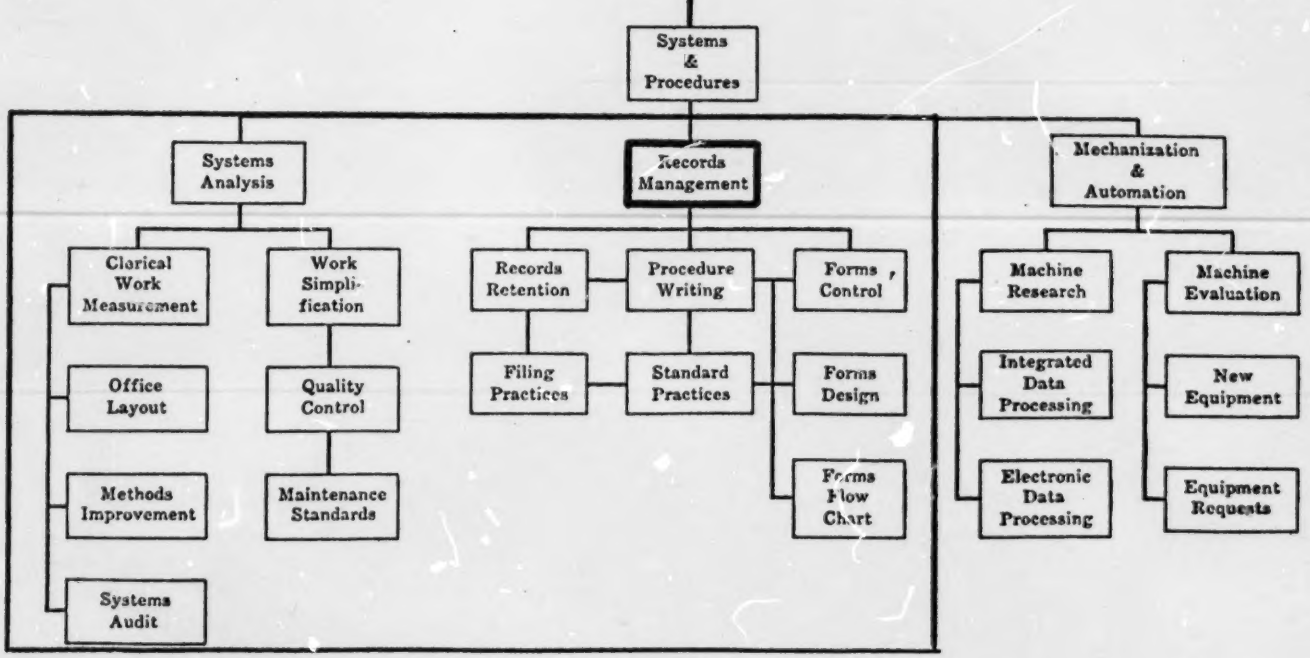

Manager
Management Consulting Service
Asst. Manager Corp. Procedure Control
Asst. Manager Corp. Data Proc. Planning & Control
Asst. Manager Corp. Information Processing Center
Staff Specialist Equip. Planning
Sec. Supv. Syst. & Proc. Develop
Sec. Supv. Proc. Admin.
Sec. Supv. Scientific Proc. Dev.
Sec. Supv. Corp. Data Proc. Plan.
Sec. Supv. Corp. Data Proc. Control
Sec. Supv. Prog.
Sec. Supv. Opr.
Sec. Supv. Systems & Control
Unit Supr. Systems Develop.
Unit Supr. Procedure Develop.
Unit Supr. Special Studies
Unit Supr. Forms Control
Unit Supr. Key Punch Unit
Unit Supr. EAM Unit
Unit Supr. 709 Unit

Example 1

CORPORATE SYSTEMS AND PROCEDURES DEPARTMENT

ORGANIZATION CHART

SOURCE: Place, Hicks, Wilkinson, Office Management, p. 234.



Example 3

SYSTEMS FUNCTIONAL CHART

or CRT (cathode ray tube screen and computer terminal), COM (computer output microfilm), and ASPS (automated storage and retrieval systems.

Problem

The study was to determine the application of micrographics in records management in business and government for information storage and retrieval. Secondary purposes of the study were to (1) determine the kinds of information storage and retrieval systems on the market, (2) identify the users of micrographics systems according to vendors, (3) determine the relationship of vendors' claims to users' experience in the application of micrographics systems, (4) ascertain how effective users in business and government are finding micrographics systems to be in records management, (5) identify the contributions of micrographics systems to management as perceived by vendors and users, and (6) delineate the implications for business education.

Procedures

Two interview guides were used to collect data from top management executives in selected companies that market micrographics systems and with executives responsible for records management in selected companies and government agencies. The data collected were written as case reports.

Two checklists were used to determine the consistency of data collected during the interviews with vendors and users.

Nine vendors of micrographics systems in the greater Chicago area selected according to criteria from among twenty vendors in Illinois were included in the study. Nine users of the systems in the greater Atlanta area and one in Jacksonville, Florida selected according to criteria were included in the study. Each of the vendors and users was visited by the

investigator, and the executive interviewed in each company completed the interview guide as the investigator wrote the responses verbatim on a separate guide. An on-site tour was provided thereafter for the investigator to see the micrographics system (s) in operation.

The checklists were mailed to each of the vendors and users with a stamped, reply envelope for return. The response was 100 per cent.

Because of the way the survey method was used in the study to describe the growth of micrographics and its evolvement as an industry, the users of micrographics, and the market penetration in records management, as opposed to an historical survey, the data collected in the study were not analyzed statistically. Implications for the improvement of instruction in records management and related courses and for the training of business teachers and office workers were drawn.

Major Findings

The major findings of this study were:

1. Fundamental to the storage and retrieval of source-document material, is an information management system designed to facilitate the planning, controlling, and decision-making functions of management.

2. In the concept of the Administrative Support Center, five basic systems are supportive to management: telephone/mail handling, dictation and transcription, text editing, records management, and reprographics.

3. The kinds of storage for information range from simple manual techniques to discrete computer-based communication networks.

4. The vast amount of paper generated to disseminate information has resulted in a totally new storage and processing capability, micrographics.

5. The strongest justification for a micrographics system is space savings and file integrity.

6. A micrographics system usually consisted of a camera, processor, microforms, and retrieval capability.

7. The users of micrographics systems identified by vendors are in the categories of government, manufacturing, education, banking, insurance, utility, retailing, diversified-financial, transportation, engineering, and services.

8. The contributions of the micrographics industry to management as perceived by vendors were cost reduction, efficiency of operation, access to a managed information system, management of equipment and personnel, COM (computer output microfilm), and records accessibility.

9. The contributions of the micrographics industry to management as perceived by users closely paralleled the part of the Modern Office Procedures Survey related to how users rate the benefits of microfilm. These were space reduction, file integrity, and better utilization of personnel.

10. Records management was the largest segment of the micrographics industry at the time of the present study.

11. Very little about new technologies in records and information management was found in an examination of texts and instructional materials available to teachers of courses in records management, administrative management, office systems, secretarial procedures, and related courses. Micrographics, as a storage and retrieval system, was not found.

Implications

The following implications for business education can be drawn from the study:

1. The administrative support center concept presupposes different *emphases* in the training of business teachers and office workers, not totally different training altogether. Emphasis is more toward the systematic flow of information and the synthesizing of office tasks into an efficient information management system to facilitate the planning, controlling, and decision-making functions of management. The use of sophisticated, complex communication systems implies that a different emphasis is needed.

2. Business teacher educators and training directors in business can work cooperatively to define the competencies which each can develop in a prescriptive training program for potential business teachers and office workers.

3. The high cost of equipment may ultimately outweigh the cost benefit and prohibit the training of students in school laboratories for entry-level office jobs.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Micrographics and other automated storage and retrieval systems should be included in the instructional materials used by teachers in records management, administrative management, office systems, secretarial procedures, and related courses.

2. Business teachers, teacher educators, and training directors in business should work cooperatively to delineate those competencies required for job performance in a cluster of office jobs from among those generic to all office workers.

3. Staff development procedures should include teacher work days and travel reimbursement during the school year and in off periods for business teachers and teacher educators to participate on site in short training programs, institutes, and seminars in business appropriate to their teaching assignments and advanced technologies.

4. Vendors and users of contemporary systems and procedures for information management purposes should make more internships available to potential business teachers and office workers on a selected basis. Exchange programs should be encouraged.

5. Because this study was limited to the records management segment of the micrographics industry, the study whould be replicated in the area of micropublishing.